

CLAIMS

1. A conversation control system which retrieves, based on input information received from a user, a reply sentence to the input information, comprising:

a morpheme extracting unit configured to extract, based on a character string corresponding to the input information, at least one morpheme constituting a minimum unit of the character string, as first morpheme information;

a conversation database configured to store pieces of second morpheme information each showing a morpheme including a character, a string of characters or a combination thereof, and a plurality of reply sentences, which are associated with one another;

a topic search unit configured to compare, based on the first morpheme information extracted at the morpheme extracting unit, the first morpheme information with the pieces of second morpheme information, and to search a piece of second morpheme information corresponding to the first morpheme information from among the pieces of second morpheme information; and

a reply retrieval unit configured to retrieve, based on the piece of second morpheme information searched at the topic search unit, a reply sentence associated with the piece of second morpheme information.

2. The conversation control system as set forth in claim 1, further comprising:

an input type determining unit configured to determine, based on the character string corresponding to the input

information, a type of input including affirmation or negation;
wherein,

the pieces of second morpheme information are each
associated with a plurality of reply sentences;

5 the reply sentences are each associated with types of
response; and

the reply retrieval unit is configured to compare, based
on the piece of second morpheme information searched at the
topic search unit, the types of response associated with the
10 piece of second morpheme information with the determined type
of input, to search a type of response corresponding to the type
of input from among the types of response, and to retrieve a
reply sentence associated with the retrieved type of response.

15 3. The conversation control system as set forth in claim 1,
further comprising:

a topic identification information search unit
configured to compare, based on the first morpheme information
extracted at the morpheme extracting unit, the first morpheme
20 information with pieces of topic identification information for
identifying a topic, and to search a piece of topic
identification information corresponding to the morpheme
constituting the first morpheme information from among the
pieces of topic identification information; wherein,

25 the pieces of topic identification information are each
associated with the pieces of second morpheme information;

the pieces of second morpheme information are each
associated with the reply sentences; and

the topic search unit is configured to compare, based on

the piece of topic identification information searched at the topic identification information search unit, pieces of second morpheme information associated with the piece of topic identification information with the first morpheme information extracted at the morpheme extracting unit, and to search a piece of second morpheme information corresponding to the first morpheme information from among the pieces of second morpheme information.

10 4. The conversation control system as set forth in claim 3, further comprising:

a supplementation unit configured to add the piece of topic identification information searched at the topic identification information search unit to the first morpheme information extracted at the morpheme extracting unit, when no piece of second morpheme information corresponding to the extracted first morpheme information can be searched at the topic search unit; wherein,

20 the topic search unit is configured to search, based on the first morpheme information with the piece of topic identification information added at the supplementation unit, a piece of second morpheme information corresponding to the first morpheme information from among the pieces of second morpheme information.

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5. The conversation control system as set forth in claim 1, further comprising:

a ranking unit configured to perform ranking according to the frequency of search of a piece of second morpheme

information at the topic search unit; wherein,

the pieces of second morpheme information are each associated with a plurality of reply sentences;

the reply sentences are each associated with priority
5 levels to be selected as the reply sentence; and

the reply retrieval unit is configured to compare, based on the piece of second morpheme information searched at the topic search unit, the priority levels associated with the piece of second morpheme information with the rank determined at the
10 ranking unit, to identify a priority level corresponding to the rank from among the priority levels, and to retrieve a reply sentence associated with an identified priority level.

6. The conversation control system as set forth in claim 5,
15 wherein:

the reply retrieval unit is configured to perform processing of not retrieving the reply sentence, when the rank determined at the ranking unit is the lowest.

20 7. The conversation control system as set forth in claim 3, wherein:

the pieces of topic identification information are associated with one another in predetermined relationships as superordinate concepts or subordinate concepts; and

25 the topic identification information search unit is configured to compare, based on the first morpheme information extracted at the morpheme extracting unit, the extracted first morpheme information with pieces of topic identification information related to the previously searched piece of topic

identification information as superordinate concepts, and to search a piece of topic identification information corresponding to the morpheme constituting the first morpheme information from among the pieces of topic identification information.

8. The conversation control system as set forth in claim 3, wherein:

the pieces of topic identification information are associated with one another in predetermined relationships as superordinate concepts or subordinate concepts; and

when retrieving a piece of topic identification information corresponding to the morpheme constituting the first morpheme information, the topic identification information search unit is configured to search another piece of topic identification information associated with a piece of topic identification information which is a superordinate concept to the searched piece of topic identification information.

9. A conversation control method for retrieving, based on input information received from a user, a reply sentence to the input information, comprising:

a first step of extracting, based on a character string corresponding to the input information, at least one morpheme constituting a minimum unit of the character string, as first morpheme information;

a second step of comparing, based on the first morpheme information extracted in the first step, the first morpheme

information with stored pieces of second morpheme information, and searching a piece of second morpheme information corresponding to the first morpheme information from among the pieces of second morpheme information; and

5 a third step of retrieving, based on the piece of second morpheme information searched in the second step, a reply sentence associated with the piece of second morpheme information.

10 10. The conversation control method as set forth in claim 9, further comprising:

 a fourth step of determining, based on the character string corresponding to the input information, a type of input including affirmation or negation; wherein,

15 the pieces of second morpheme information are each associated with a plurality of reply sentences;

 the reply sentences are each associated with types of response; and

 in the third step, based on the piece of second morpheme
20 information searched in the second step, the types of response associated with the piece of second morpheme information are compared with the determined type of input; a type of response corresponding to the type of input is searched from among the types of response; and a reply sentence associated with a
25 searched type of response is retrieved.

11. The conversation control method as set forth in claim 9, further comprising:

 a fifth step of comparing, based on the first morpheme

information extracted in the first step, the first morpheme information with pieces of topic identification information for identifying a topic, and searching a piece of topic identification information corresponding to the morpheme
5 constituting the first morpheme information from among the pieces of topic identification information; wherein,

the pieces of topic identification information are each associated with pieces of second identification information;

the pieces of second identification information are each
10 associated with reply sentences; and

in the second step, based on the piece of topic identification information searched in the fifth step; pieces of second morpheme information associated with the piece of topic identification information are compared with the first
15 morpheme information extracted in the first step; and a piece of second morpheme information corresponding to the first morpheme information is retrieved from among the pieces of second morpheme information.

20 12. The conversation control method as set forth in claim 11, further comprising:

a sixth step of adding a piece of topic identification information searched in the fifth step to the extracted first morpheme information when no piece of second morpheme
25 information corresponding to the extracted first morpheme information can be searched in the second step; wherein,

in the second step, based on the first morpheme information with the piece of topic identification information added in the sixth step, a piece of second morpheme information

corresponding to the first morpheme information is searched from among the pieces of second morpheme information.

13. The conversation control method as set forth in claim 9,
5 further comprising:

a seventh step of performing ranking according to the frequency of search of the piece of second morpheme information in the second step; wherein,

10 the pieces of second morpheme information are each associated with a plurality of reply sentences;

the reply sentences are each associated with priority levels to be selected as a reply sentence; and

15 in the third step, based on the piece of second morpheme information searched in the second step, the priority levels associated with the piece of second morpheme information are compared with a rank determined in the seventh step; a priority level corresponding to the rank is identified from among the priority levels; and a reply sentence associated with the identified priority level is retrieved.

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14. The conversation control method as set forth in claim 13, wherein:

25 in the third step, when the rank determined in the seventh step is the lowest, processing of not retrieving a reply sentence is performed.

15. The conversation control method as set forth in claim 11, wherein:

the pieces of topic identification information are

associated with one another in predetermined relationships as superordinate concepts or subordinate concepts; and

in the fifth step, based on the first morpheme information extracted in the first step, the extracted first morpheme
5 information is compared with pieces of topic identification information related to a previously retrieved piece of topic identification information as superordinate concepts; and a piece of topic identification information corresponding to the morpheme constituting the first morpheme information is
10 searched from among the pieces of topic identification information.

16. The conversation control method as set forth in claim 11, wherein:

15 the pieces of topic identification information are associated with one another in predetermined relationships as superordinate concepts or subordinate concepts; and

in the fifth step, when a piece of topic identification information corresponding to the morpheme constituting the
20 first morpheme information is searched, another piece of topic identification information related to a piece of topic identification information which is a superordinate concept to the retrieved piece of topic identification information is searched.